

These are Thy glorious works, Parent of Good ;  
 Almighty ! Thine this universal frame,  
 Thus wondrous fair : Thyself how wondrous then :  
 Unspeakable ! who sit'st above these heav'ns.  
 To us invisible, or dimly seen  
 In these thy lowest works : yet these declare  
 Thy goodness, beyond thought and pow'r divine.

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## II.

### A FEW OBSERVATIONS ON THE COUNTRY NEAR LAKE TORRENS.

READ BY MR. F. SINNETT.

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26TH SEPTEMBER 1854.

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EVERY one who knows anything of Australian geography, must have observed upon the map the strange horse-shoe shaped lake that is indistinctly shadowed forth; and that appears to form a sort of natural northern boundary to the neighbouring Colony of South Australia. The lake when I visited the district, was but little known, and is but little known now. The outer shore of the horse-shoe lake has been seen by but few persons, except at the extremities. But one party ever actually reached the water from the outside;—this was a small detachment from the exploring party commanded by Captain Sturt, the detachment being

headed by Dr. Browne, the medical officer of that expedition; and who, after the death of the second in command, and during the illness of the leader, became practically the head of the expedition. He not only reached the water, but bathed in it, and so finally disposed of the doubt that long existed as to whether the so-called lake deserved the name, or was more than a long strip of desert land, rendered white and shining by an incrustation of salt.

Until the beginning of 1851, the nature of the country lying within the bight or horse-shoe had been completely misrepresented, and a personal knowledge of its true character is still confined to a few. Nearly twelve years before, Mr. Eyre, the late Lieut. Governor of the middle island of New Zealand, had crossed the western horn, at a place then—and usually—devoid of water, but where during floods a torrent rushes down into the head of Spencer's Gulf, close to Mount Aden. I may mention here, that in 1851,—after an interval of twelve years—we found the wheel tracks of Mr. Eyre's party along the banks of a creek which he describes in his narrative, and we also found the traces of one of his encampments at another watering place.

While Mr. Eyre perhaps stands, in the dismal records of Australian geographical research, without second as an intrepid and long-suffering explorer, it has been his unfortunate fate often to pass in the immediate neighbourhood of excellent country without ever lighting upon it, and this was the case in the Lake Torrens District. I attribute his misfortune to an inveterate propensity the brave explorer possessed to adhere to coast lines whenever he had an opportunity. Thus by closely coasting Spencer's Gulf he succeeded in confining his observations to a plain covered with salsolaceous plants and almost destitute of water, while over a broad district, since found to be not only habitable, but in many places highly fertile, he wrote in large letters upon his map that the district appeared to consist of nothing but



barren hills and spinafex ranges. This part is mentioned for reasons that will be presently shown.

Among the "barren and useless spinafex ranges," there are a number of excellent sheep and cattle runs, in most of which an interest is held by Dr. Browne, before-mentioned, and his brother, who have really been "pioneers of civilization" in that neighbourhood, and who have been mainly instrumental in opening up the pastoral resources of the "far north" of South Australia: Among these runs is one characterised by a physical peculiarity that deserves mention.

An extraordinary triangular range of mountains encloses about twenty-five square miles of fertile country so completely as to have won for this strange place the name of "the Pound." The hills are from two to four thousand feet in height, and out of several which I had the honour of naming, two bear the names of members of the Victorian Institute. The only inlet or outlet to the pound is through a narrow gorge, closed up when I last saw it by about a hundred feet of rude fencing, and through which comes a stream that carries away, to lose in the great plains of Lake Torrens, the drainage from the three ranges—a triangular range of hills. The hills are so steep on the inner side that neither man nor beast can climb them, and among the incidents of the discovery of the place, I may mention that two extremely old bullocks, who, I know not how, had found their way into the pound, were disturbed in their monarchy of all they surveyed, and were as wild as if they had never enjoyed the advantage of communication with civilised man. It was their misfortune also to be exceedingly fat, and within a few weeks after their discovery when I first visited the domain of which they had previously held undisturbed possession they were no more.

According to most maps the extreme length of Lake Torrens, measuring round the horse-shoe, from one extremity to the other, is represented at about four hundred miles. I am convinced that this is a considerable exaggeration.

I speak only of the inner bight, for how far the lake may extend to the north-west is at present unascertained. From actual though rough survey, however, I ascertained that even the ten thousand square miles of country were included within the horns of the gigantic crescent.

The area is extremely mountainous, and from the tops of many high hills standing seventy or eighty miles to the northward of "the pound," I have seen the lake stretching like a streak of silver between myself and the horizon, and was convinced that the ordinary account which represents it as but a narrow strip of water is substantially correct. I speak of the North-Eastern, the Eastern, and the Western portions of the lake. The North-Western, as I have said, has never been visited.

Nor is it easy to visit the lake itself from the inner shore at any place except near Mount Aden. Even there in ordinary seasons it would be necessary to labour for at least ten or twelve miles through a sandy plain bearing no vegetation, except a few stunted salt bushes, and totally destitute of fresh water, while nearer to the lake a broad belt of salt incrustation, left by the recession of the water, would, except in the very rare event of a flood, have also to be overcome. Proceeding farther northward and then eastward in a direction more or less parallel to the lake, we found that the farther north we got the wider became the strip of what may be called the Inner Lake Torrens Desert. Thirty or forty miles to the westward of Mount Serle, as we emerged from the hilly country on to the desert, we could see the lake, or its salt banks shining far away to the north, but we estimated the distance to be at least fifty miles, and had no disposition whatever to go further in that direction. From the summit of Mount Serle the lake is again visible to north-east and east—to the east through gaps in mountain ranges—to the north-east without any interruption, except that caused by two conical peaks that stand in strange isolation on the level



plain of the desert, and which from their bearings and apparent distance I conclude to be—or rather that one of them is—the Mount Hopeless of Mr. Eyre. Now is it to be wondered at that he should have so named the hill, or that even his spirit should have been subdued into hopelessness of farther discovery in that direction.

The barrier that is drawn round the district of hilly and inhabitable country separated from Lake Torrens by the strip of desert I have described, is rendered yet more insurmountable by the fact that even those water-courses which towards their sources contain abundance of fresh water become perfectly salt lower down. Thus the creek that runs through the gorge of “the Pound,” contains abundance of good water for several miles, but afterwards becomes salt, and finally dwindles away and loses itself before reaching the lake. The Frome River described by Mr. Eyre, and which another of our party and myself descended some distance farther than he appears to have done, serves to illustrate the same phenomenon. Where we first came upon this creek the few holes that contained any water at all contained water that was perfectly good and fresh. Lower down the stream passed through a long gorge in the cliffs, ascending in several places almost perpendicularly for several hundred feet, and with considerable difficulty we followed the creek for about a dozen miles. Though still pent up among the hills, we found the water gradually changing from fresh to brackish, and from that to salt. We did not succeed, as I should have been very glad to have done, in following the Frome until it finally emerged from the hills into the desert plain.

One peculiarity of what may be called the outer circle of hills, running more or less parallel to the inner shore of Lake Torrens, deserves mention. Approaching these from the side farthest from the lake, it is easy to climb them, but on reaching the summit of the range I invariably found steep and inaccessible cliffs facing towards the lake.

I regret that my geological knowledge does not enable me to give a scientific description of a district that I am sure would well repay a visit to a good geologist. One member of our Institute, Dr. Mueller, will, I trust, give us what no one but himself can—for no botanist but himself has been in the neighbourhood—an account of the vegetable kingdom of the Lake Torrens District.

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### III.

## ON STATISTICAL SANITARY PROCESSES.

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BY W. H. ARCHER,

ASSISTANT REGISTRAR-GENERAL.

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READ SEPTEMBER 26, 1854.

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THE Council of the Victorian Institute having honoured Dr. Maund and myself with the task of reporting on "Sanitary Processes," and especial invitation having been made to me to initiate the subject this evening, I purpose to show briefly the groundwork on which all sanitary systems in this Colony should be based, or in other words, our PROCESSES of INFORMATION, or how we must get at our facts.

For several years past,—in fact, ever since a Registrar General's Department has existed in London, the public mind in Great Britain and other countries has from time to time been agitated by startling revelations of the prevalence of recurrent forms of disease in certain localities, which seemed to be the very hot-beds of typhus and cholera, and other